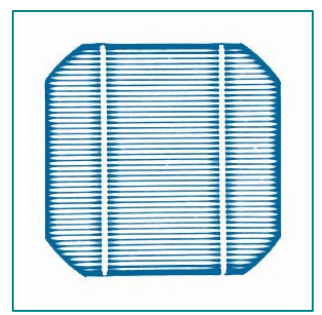
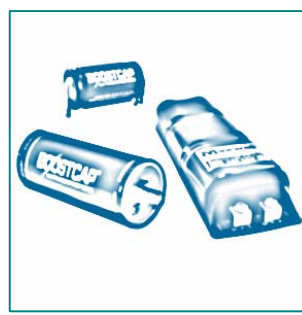


**We Adapt
So You Don't Have To!**

ZCON™
Electrochemical Impedance Analyzer



Feature

- For versatile AC impedance experiment using external electronic load or potentiostat/galvanostat..
- 2 signal input channel(current and voltage)/1 signal output for sinewave
- A flexible frequency generator/analyzer
- Generate various waveforms (eg. Sinusoidal etc)
- Designed for spectrum analysis in the electrochemical field
- Simulation and fitting with ZMAN™
- High current application with external load and/or potentiostat/galvanostat
- Software controlled function
- Graphic-based user-interface
- Dual real time graph (Bode, Nyquist, etc) during measurement

ZCON™ impedance analyzer is spin off model from Z# multichannel impedance monitor. This model is for single channel application only.

ZCON™ provides all tools for the application of fuel cell stack, battery pack , and general electrochemical study requiring EIS measurement using external electronic load or potentiostat/galvanostat.

By employing electronic load, ZCON™ can be used to determine the efficiency of fuel cell and anodic/cathodic process mechanisms by calculating impedance with the measurements of I and E at given frequency.

The complete system is software-controlled and all functions such as ranging, calibration, and measurements can be automated.

Supporting external load/Potentiostat

- TDI dynaload RBL488 series
- WonATech WEL Load
- ZSTAT potentiostat/galvanostat
- 3rd parties potentiostat/galvanostat

Other model might be needed to set some parameters by manually.

Please contact with your regional distributor about other 3rd parties products' availability with ZCON™

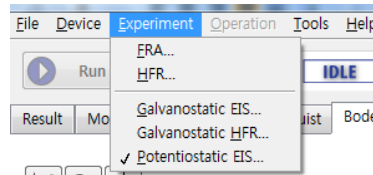
Software (Z100 Navigator)



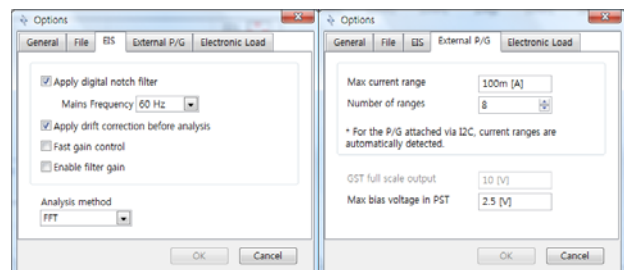
Z100 navigator is Zcon™ control software. This can be used with external potentiostat/galvanostat or electronic load by setting for impedance measurement or waveform generator.

List of Impedance Techniques with Zcon

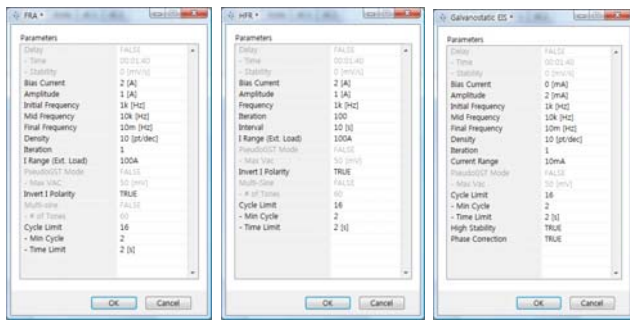
- Frequency Response Analyzer (FRA)
- High Frequency Resistometry (HFR)
- Galvanostatic Electrochemical Impedance Spectroscopy (GEIS)
- Galvanostatic HFR (GHFR)
- Potentiostatic EIS (PEIS)



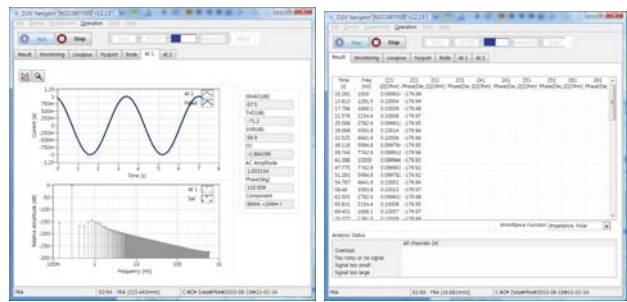
Transient recorder (Waveform generator)
DC/Sine/Cosine/Ramp/Sawtooth/Square/Triangular/Pulse/
Multi-tone/ Arbitrary



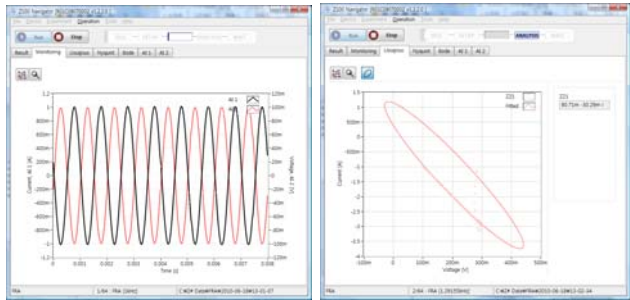
Environment setting menu



Parameter setting for each techniques

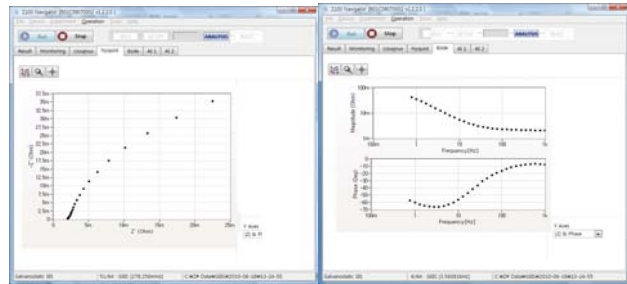


AC Signal Input (power spectrum) Result



Monitoring

Lassajous plot



Real time Nyquist plot

Real time Bode Plot

- **ZMAN™ will be supplied for analysis of Zcon data at free of charge. Please refer to ZMAN introduction.**

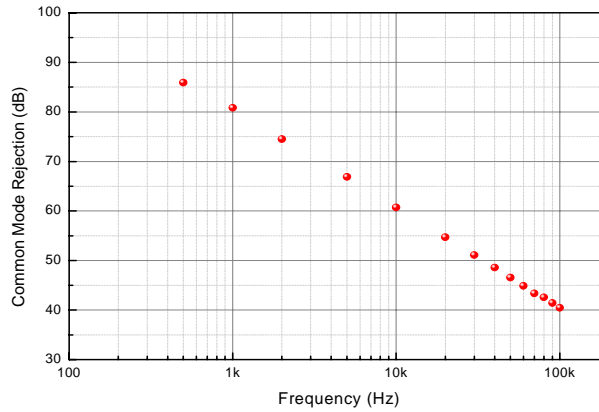
System Configuration

Hardware (controller), Software, USB cable, Power adapter

Specification

Analog Out	as Signal Generator	
# of Channels	1	
Configuration	Single-ended	
Maximum Output	-11.0 to +11.0 V (DC + AC)	
Voltage Offset	< 0.5 mV, software corrected zero	
DC Bias	Range	Resolution
	0.0 to 5.0 V	0.076 mV
	0.0 to +10.0 V	0.153 mV
	-5.0 to +5.0 V	0.153 mV
	-10 to +10.0 V	0.305 mV
	-2.5 to +2.5 V	0.076 mV
	-2.5 to +7.5 V	0.153 mV
AC Waveform		
Predefined Type	DC, Sine, Cosine, Ramp, Sawtooth, Triangle, Square, Pulse, Multi-tone	
Frequency Range	1 uHz to 100kHz Resolution: 5000 steps/decade	
Frequency Accuracy	Typ. 75 ppm, Max ±200 ppm	
Frequency Stability	< 2 ppm @ 1 kHz	
	< 20 ppm @ 10 kHz	
	< 200 ppm @ 100 kHz	
Amplitude	< 2000 ppm(0.2%) @ 1 MHz	
Post-Gain/Attenuation	1 mVpp to 5 Vpp -44 dB to +40 dB with 6 dB step, automatic gain selection	

Reconstruction Filter	10 to 150 kHz 8th order low pass filter with 10kHz step or By-Pass
Gain Error	< 0.5 %
Analog In	
as Frequency Analyzer	
# of Channels	1 for current input and 1 for voltage input
Configuration	Differential
Max. Common mode voltage	±100 V
Voltage Offset	< 0.5 mV, software corrected zero
Bandwidth	550 kHz
Input Impedance	110 kOhm
Pre-Attenuation	-20dB (×0.1)
Post-Gain/Attenuation	-44 dB to +40 dB (×100) with 6 dB step or ×200, ×400, ×800, ×1600
Anti-aliasing Filter	10 to 150 kHz 8th order low pass filter with 10 kHz step or By-Pass
CMRR	> 80 dB @ 1 kHz, > 60 dB @ 10 kHz, > 40 dB @ 100 kHz (refer to the below graph)



Expansion Ports	
I2C In & Out	Reserved for future
General	
Interface	USB 2.0 high speed
Power	External 50W AC-DC Adapters, +5/+15/-15VDC with AC Input of 100 to 240V, 2A, 50/60 Hz
Operation Condition	0 to 50 °C, 0 to 90% humidity (non-condensing)
Warranty	1 year parts and labor on defects in materials and workmanship

Related products with Optional accessories

➤ Fuel cell test system



➤ Fuel cell hardware fixture



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